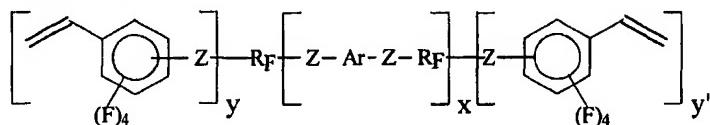


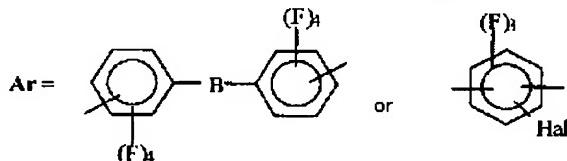
What is claimed is:

1. A fluorine compound having perfluorostyrene introduced at a terminal thereof, as represented in the  
5 following Formula 1:

Formula 1



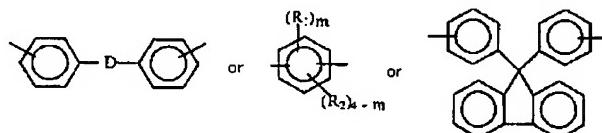
Wherein Z is O or S; R<sub>f</sub> is an aliphatic or aromatic group; y is a natural number of 1-10; y' is an integer of  
10 0-1; x is an integer of 0-200; and



Wherein B is a single bond or selected from the group consisting of -CO-, -SO<sub>2</sub>-, -S- and -O-; and Hal is selected from the group consisting of F, Cl, Br and I.

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2. The fluorine compound as defined in claim 1, wherein y and y' are 1, and R<sub>f</sub> is -CH<sub>2</sub>(CF<sub>2</sub>)<sub>n</sub>CH<sub>2</sub>-,



CH<sub>2</sub>CF<sub>2</sub>O(CF<sub>2</sub>CF<sub>2</sub>O)<sub>n</sub>CF<sub>2</sub>CH<sub>2</sub>- , or

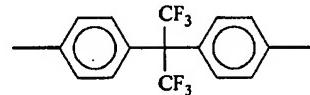
Wherein n is a natural number of 1-12; D is selected  
20 from the group consisting of -C(CF<sub>3</sub>)<sub>2</sub>-, -C(CH<sub>3</sub>)<sub>2</sub>-, -CO-, -SO<sub>2</sub>-, -O- and -S-; R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of H, or halogen elements, including F, Cl, Br and I; and m is a natural number of 1-3.

25

3. The fluorine compound as defined in claim 2,  
wherein Z is O, and x is an integer of 2-50.

4. The fluorine compound as defined in claim 3,  
5 wherein Ar is halogenated pentafluorobenzene, and R<sub>F</sub> is -

CH<sub>2</sub>(CF<sub>2</sub>)<sub>n</sub>CH<sub>2</sub>- , -CH<sub>2</sub>CF<sub>2</sub>(OCF<sub>2</sub>CF<sub>2</sub>)<sub>n</sub>OCF<sub>2</sub>CH<sub>2</sub>- or



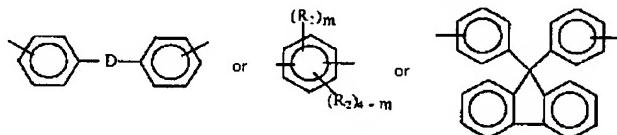
5. The fluorine compound as defined in claim 1,  
wherein y is a natural number of 1-10, and x and y' are 0.

10

6. The fluorine compound as defined in claim 5,  
wherein y is 1, and R<sub>F</sub> is a substituted or unsubstituted  
alkyl group.

15

7. The fluorine compound as defined in claim 5,  
wherein y is 2, and Z is O, and R<sub>F</sub> is -CH<sub>2</sub>(CF<sub>2</sub>)<sub>n</sub>CH<sub>2</sub>- , -

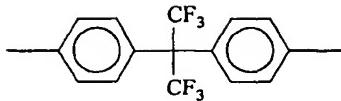


CH<sub>2</sub>CF<sub>2</sub>O(CF<sub>2</sub>CF<sub>2</sub>O)<sub>n</sub>CF<sub>2</sub>CH<sub>2</sub>- , or

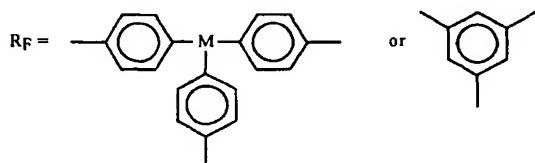
Wherein n is a natural number of 1-12; D is selected  
from the group consisting of -C(CF<sub>3</sub>)<sub>2</sub>- , -C(CH<sub>3</sub>)<sub>2</sub>- , -CO-, -  
20 SO<sub>2</sub>- , -O- and -S-; R<sub>1</sub> and R<sub>2</sub> are independently selected  
from the group consisting of H, or halogen elements,  
including F, Cl, Br and I; and m is a natural number of 1-  
3 .

25

8. The fluorine compound as defined in claim 7,  
wherein R<sub>F</sub> is -CH<sub>2</sub>(CF<sub>2</sub>)<sub>n</sub>CH<sub>2</sub>- , -CH<sub>2</sub>CF<sub>2</sub>(OCF<sub>2</sub>CF<sub>2</sub>)<sub>n</sub>OCF<sub>2</sub>CH<sub>2</sub>- , or



9. The fluorine compound as defined in claim 5,  
wherein  $y$  is 3, and  $R_F$  is



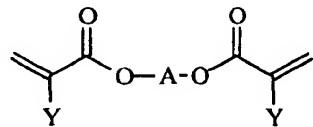
5

Wherein  $M$  is selected from the group consisting of  $C-CH_3$ ,  $C-CF_3$ ,  $C-CCl_3$ ,  $C-CBr_3$ ,  $N$ ,  $P$  and  $P=O$ .

10. The fluorine compound as defined in claim 5,  
wherein  $y$  is a natural number of 4-10, and  $-Z-R_F$  is an  
aromatic or aliphatic polyol.

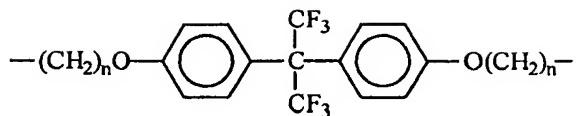
15. A polymer coating solution, comprising at least one fluorine compound selected from the group consisting of fluorine compounds having perfluorostyrene introduced at a terminal thereof of claim 1, at least one acrylate compound selected from the group consisting of acrylate compounds represented by the following Formula 7, and a photoinitiator:

20. Formula 7



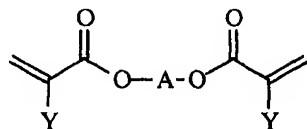
Wherein  $A$  is a fluorinated aliphatic or aromatic group, and  $Y$  is  $H$  or  $CH_3$ .

25. 12. The polymer coating solution as defined in claim 11, wherein  $A$  is  $-CH_2(CF_2)_nCH_2-$ ,  $-CH_2CF_2(OCF_2CF_2)_nOCF_2CH_2-$  or



13. A polymer coating solution, comprising 30-70 wt% of at least one fluorine compound selected from the group consisting of fluorine compounds having perfluorostyrene introduced at a terminal thereof of claim 1, 30-70 wt% of at least one acrylate compound selected from the group consisting of acrylate compounds represented by the following Formula 7, and 0.5-4 wt% of a photoinitiator:

10                  Formula 7



Wherein A is a fluorinated aliphatic or aromatic group, and Y is H or CH<sub>3</sub>.

15                  14. An optical waveguide device, comprising a lower cladding layer formed on a planar substrate, a core layer formed on the lower cladding layer, and an upper cladding layer formed on the core layer, wherein the core layer and the lower and upper cladding layers include the fluorine compound of any one of claims 1 to 10.

20                  15. An optical waveguide device, comprising a lower cladding layer formed on a planar substrate, a core layer formed on the lower cladding layer, and an upper cladding layer formed on the core layer, wherein the core layer and the lower and upper cladding layers include the coating solution of claim 11 or 12.